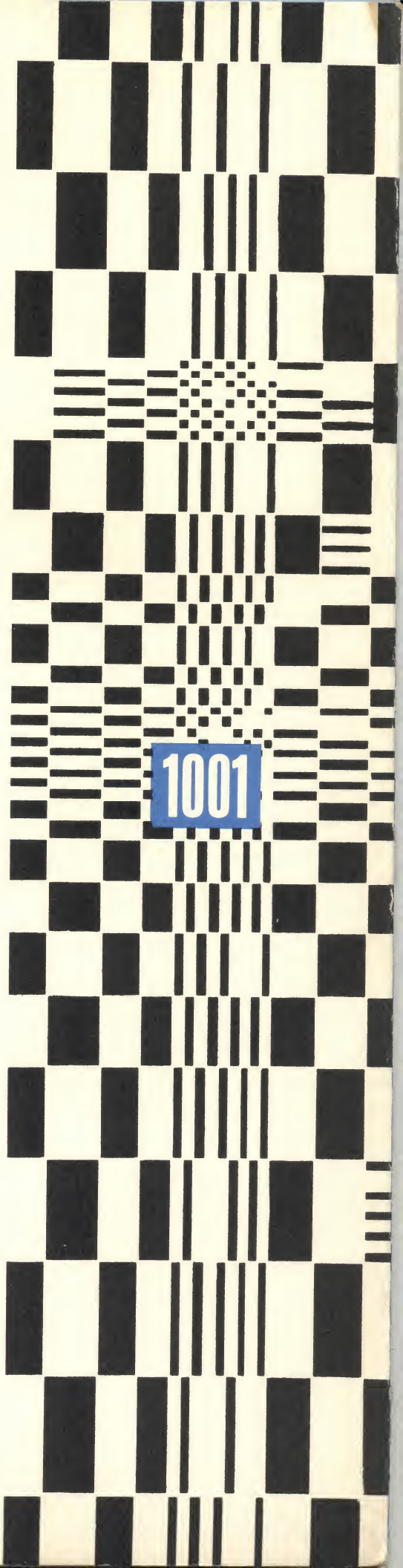


**JOINING
THE
UNIVAC[®] 1004
FAMILY**

UNIVAC 1001 CARD CONTROLLER

1001



1001



TAKE:

the UNIVAC 1004 series of data processors: the family of low-cost electronic punched card and magnetic tape equipment which has revolutionized punched card accounting.

ADD:

the new UNIVAC 1001 Card Controller: a fast, efficient, and economical card-arranging unit with multi-purpose capabilities.

RESULT:

a powerful electronic symbiosis—a combination of two independent units working on-line as a multi-file card processing system...capable of handling larger volumes of information with greater speed and more flexibility than ever before. At the same time, this combination retains the programming and operational

simplicity which is a characteristic of the 1004. Further, the growth power inherent in this system facilitates the handling of expanding work loads.

An outstanding feature of the Card Controller in an on-line configuration with the 1004 is its ability to function under its own control when required, with complete independence from the 1004. The 1004 is never tied up while the Card Controller performs collating and file-processing operations. The Card Controller can perform off-line card arranging functions, leaving the 1004 free to perform its own processing jobs.

Three distinct modes of operation of the 1004 and the Card Controller make this the most versatile systems combination of its kind.

The newest member of the 1004 family is an extremely versatile machine whose chief off-line function is collating. It collates alpha-numerically at extremely high speeds—faster by more than 50% than any existing collator. Its two card feeds reach a combined, record speed of 2,000 cpm—each feed operating at a rate of 1,000 cpm. Collating jobs are performed faster than on any other machine of its kind. But the Card Controller is not just a collator. It has multi-purpose capabilities which also permit card proving and editing, sorting, and statistical sorting.

Computer-type processes of comparing, adding, subtracting, and programmed multiplication are incorporated in the Card Controller. It has 256 positions of powerful core storage and a fast cycle time

of 12 microseconds. The Card Controller can compare on the basis of a full 64-character set. There are seven large-capacity output stackers which provide greater selection capacity than on any other machine of its kind. The Card Controller is available in a 90-column model, an 80-column model which can also read binary-coded cards, or an 80-column model which operates in the Univac XS-3 code. With all of this, the Card Controller still possesses operational simplicity. It operates under control of a program panel, and it has the additional feature of the Multi-Program Panel—a single panel which is pre-wired to perform 18 different collating functions. This panel facilitates the transition from your present equipment to the 1001, since re-programming is minimized.

1. UNDER CONTROL OF 1004



When the Card Controller operates under control of the 1004 Processor, it becomes an additional high-speed input to the 1004. In a typical configuration, for example, consisting of the Card Controller, the 1004, and a Read-Punch unit, the combined inputs provide for the simultaneous reading from four card feeds. The speed that results from this combination is unprecedented: up to 2,000 cpm from the two feeds of the Card Controller, 615 cpm from the 1004, and 200 cpm from the Read-Punch. With this increased number of card feeds, four separate files can be fed simultaneously without having to merge any of the cards.

Although the reading of input data for the 1004 is one of the basic operations of the Card Controller, its computing capabilities enable it to do much more. The Card Controller can edit and verify all data before sending it to the 1004. It can further test for the presence or absence of control punches and special codes, check the validity and consistency of data, detect double punches or blank columns.

Through its arithmetic processes, the Card Controller can develop card counts, crossfoot card data, accumulate control totals of input files, multiply data on the cards, and then send the results of these calculations to the 1004. Overall processing time is saved because the Card Controller performs these tasks ordinarily done by the 1004.

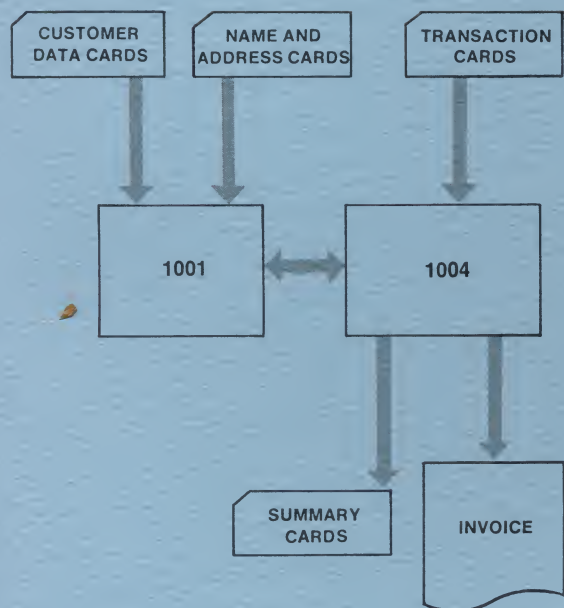


2. DUAL PROCESSING



The independent processing capabilities of the 1004 and the Card Controller plus their ability to exchange data and instructions bi-directionally, enable them to accomplish dual processing. Dual processing is the ability of the 1004 and the Card Controller to operate and process various segments of the same job simultaneously. In dual processing the two units share the processing tasks, each performing its own tasks independently. Neither depends on the other except when exchanging information. Program interrupt and bi-directional data flow in both allow them to communicate when necessary.

For example:



This example illustrates the "look ahead" feature of the Card Controller. It is advancing the file to search for the next record while the 1004 is processing the current record. This feature increases the speed and expedites the throughput of the entire system.

The dual processing power of the Card Controller and the 1004 is greater than any other such systems combination. The throughput capacity of the 1004 can be doubled. The number of machine operations is reduced, and there is consequently less card handling. Turn-around time is shortened, and efficiency of the entire installation is increased. Scheduling is simplified, as both units can work together at full capacity.

1001 Card Controller

- A. Searches name and address file for next customer to be processed. Locates name and address record and performs necessary preliminary editing.
- B. Sends interrupt to 1004.
- C. Sends data to 1004.
- D. Reads next customer data card and searches name and address file for next matching customer.

1004 Card Processor

- A. Reads, processes the transaction cards, prints the invoice of the previous customer, and punches summary cards.
- B. When invoice processing is completed, tests for interrupt signal from Card Controller.
- C. Receives data from Card Controller.
- D. Reads, processes the transaction cards, prints the invoice, and punches summary cards.

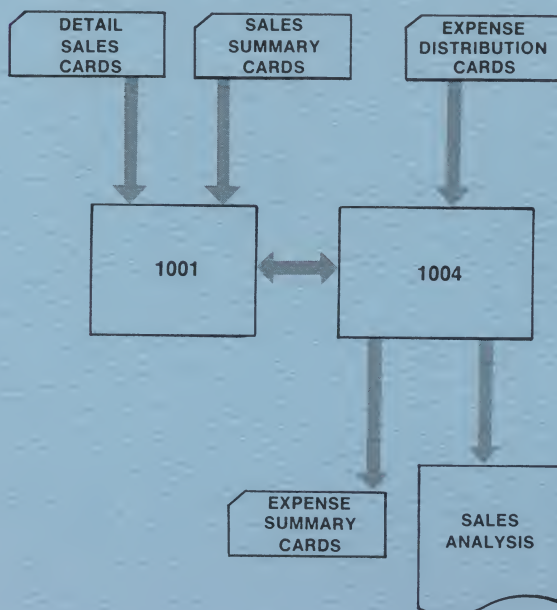


3. CONCURRENT PROCESSING



Look still further into the capabilities of the 1004 and the Card Controller. It is possible for them to process concurrently two entirely different jobs and to produce two separate outputs. The independent processing capabilities, the program interrupt, and the bi-directional data transfer contribute to this new concept in low-cost data processing. The Card Controller uses the peripherals of the 1004 for its output and becomes a complete processing system in itself. Processing capacity is effectively doubled.

For example:



1001 Card Controller

- A. Reads detail sales cards and sales summary cards. Processes sales analysis report.
- B. When a line of the report is ready for printing, sends interrupt signal to 1004.
- C. Sends data to be printed to 1004.
- D. Resumes Card Controller program.

1004 Card Processor

- A. Reads and summarizes expense data from expense distribution cards. Punches the expense summary card.
- B. Periodically tests for an interrupt signal from Card Controller. If Card Controller is not ready to send data, resumes program.
- C. If interrupt present, receives data from Card Controller and prints a line of the sales analysis report.
- D. Resumes 1004 program.

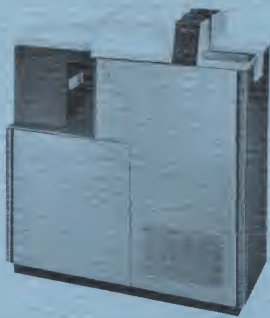
Concurrent processing relieves the 1004 of routine processing jobs. The 1004 is freed for more complex processing tasks while the Card Controller performs its operations with complete independence.

The 1004 and the 1001 stand unique as the only units of their kind which perform concurrent processing. This combination expands the capacity, increases the versatility, and reduces the operating costs of data processing.

MEET THE REST OF THE FAMILY...

1004 peripheral units serve the increasing demands of a growing business.

- 1) Card Punch—card-punching at up to 200 cards per minute is available. Output punched cards are automatically checked for accuracy by a weighted hole-count checking feature. Card punching can occur simultaneously with printing and card-reading and can overlap processing.
- 2) Read-Punch Unit—reads data from standard 90- or 80-column cards and punches output data into the same cards. Cards are handled at 200 per minute.



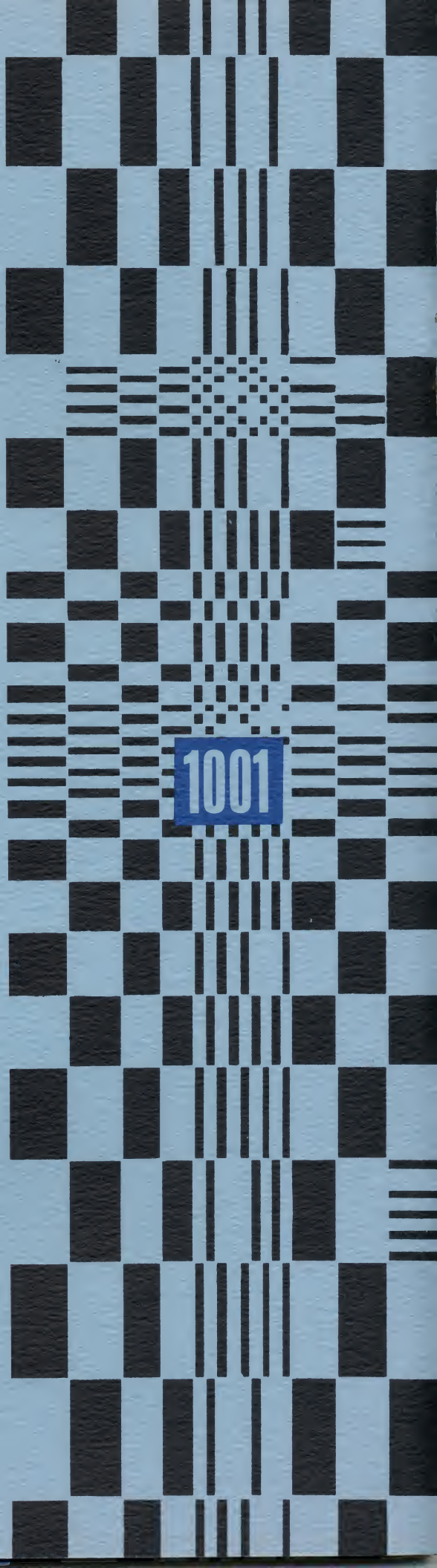
- 3) Auxiliary Card Reader—provides another input to the 1004. Reads at the rate of 400 cpm.
- 4) Data Line Terminals—high-speed communications terminals which transmit 2,400 bits of information per second over leased lines, 2,000 bits per second on a toll line. With a Data Line Terminal, any 1004 System can transmit or receive data over telephone lines.



- 5) Paper Tape Reader—a powerful, flexible input unit which reads 5-, 6-, 7-, or 8-channel paper tape at 400 characters per second. Reading is automatically parity-checked.
- 6) Paper Tape Punch—can be installed on any 1004 System equipped with a Card Punch or Read-Punch. This unit punches information into 5-, 6-, 7-, or 8-channel tape at 110 characters per second.
- 7) Magnetic Tape Units—provide high-speed input/output. These tape units can read and write in densities of 200, 556, or 800 characters per inch. One 2,400 ft. reel of tape will contain the equivalent of 150,000 to 160,000 90- or 80-column cards. Tape units are compatible with those of larger EDP systems.



With the addition of the 1001 Card Controller, the 1004 family of computing equipment advances still further its position as the most efficient, flexible, and economical in its price class. The Univac representative in your area can supply additional information. Why not call him today.



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